F-1 INDUSTRIAL FURNACE

PHASE II HWC MACT NOTICE OF INTENT TO COMPLY

PREPARED FOR:

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AUGUST 2006
DRAFT
FOCUS PROJECT NO. 030601

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1.0 INTRODUCTION

1.1 GENERAL UNIT DESCRIPTION

Basic Chemicals Company, LLC, (Basic) operates the F-1 Industrial Furnace (F-1 Furnace) at the Geismar Plant located at 8318 Ashland Road in Ascension Parish, Geismar, Louisiana. The F-1 Furnace is classified as a hydrochloric acid production furnace (HAPF) under the Phase II Hazardous Waste Combustor (HWC) Maximum Achievable Control Technology (MACT) rule (40 CFR 63, Subpart EEE). The F-1 Furnace is used to thermally treat a number chlorinated hydrocarbon wastes, and vapor vent streams, generated from manufacturing units at the Geismar Plant. The hydrogen chloride (HCl) generated from the combustion is recovered as aqueous HCl. The F-1 Furnace currently operates under Resource Conservation and Recovery Act (RCRA) and Clean Air Act (CAA) Title V Operating permits. The facility is a "major source" as defined by the CAA regulations.

1.2 UNIT HISTORY

The F-1 Furnace treats vapor streams under the performance standards of the Hazardous Organic National Emissions Standards for Hazardous Air Pollutants rule (Hazardous Organic NESHAP or HON rule). The F-1 Furnace treats liquid wastes under the performance and emissions standards of the RCRA Hazardous Waste Burned in Boilers and Industrial Furnaces (BIF) [40 CFR 266, Subpart H]. The F-1 Furnace was originally permitted as a hazardous waste incinerator under RCRA and underwent trial burn testing in 1990 to demonstrate compliance with RCRA. The current F-1 RCRA Part B permit was issued on October 16, 1995. Basic petitioned the Louisiana Department of Environmental Quality (LDEQ), and subsequently received approval, to reclassify the unit as a HAPF under HWC MACT. The existing permits specify operating conditions, emission limits, and necessary instrumentation and interlocks to ensure that the F-1 Furnace maintains highly efficient destruction of organics and is operated in full compliance with existing state and federal environmental regulations.

1.3 HAZARDOUS WASTE UNIT OPERATIONS

Basic produces a variety of chlorinated organic chemicals. Most of these chemicals are recovered on site in closed-loop recovery systems. However, despite an emphasis on waste minimization at the facility, a variety of liquid waste streams are generated that can not be reused or recovered. The liquid waste streams are treated via combustion in the F-1 Furnace. The F-1 Furnace system includes a boiler which recovers heat from the combustion gases to generate steam for on-site use. The HCl generated by combustion is removed from the combustion gas using water sprays and packing in absorbing columns. The fresh water makeup to the HCl recovery system is controlled to produce 10-18 weight percent aqueous HCl. The recovered HCl is used for neutralization in the facility's wastewater treatment system. Subsequent to the HCl recovery section, additional packed sections and pH controlled water sprays are used to remove residual HCl and molecular chlorine (Cl_2) before the combustion gas is discharged to the atmosphere.

1.4 HWC MACT HISTORY AND APPLICABILITY

On September 30, 1999, under joint authority of RCRA and CAA, the Environmental Protection Agency (EPA) published more stringent performance and emission standards, and additional compliance requirements for Phase I HWC sources (incinerators, cement kilns, and light weight aggregate kilns). Emission standards were established for dioxin/furans, mercury, semi-volatile metals (lead and cadmium), low volatile metals (arsenic, beryllium, and chromium), hydrogen chloride and molecular chlorine (HCl/Cl_2), and particulate matter. These regulations, which are referred to as the HWC MACT rule, are promulgated at 40 CFR 63 Subpart EEE.

On February 13, 2002, as a result of legal challenges to EPA's methodology for arriving at the emission standards, the EPA promulgated an interim rule for Phase I sources that amended portions of the originally promulgated rule. Revised emission standards, as well as changes in several provisions for maintaining continuous compliance with the emission standards, were promulgated in this interim rule. On October 12, 2005, the EPA published the Phase I Final Replacement Standards and Phase II standards. Sources covered by the Phase II standard include hazardous waste burned in industrial, commercial, and institutional boilers and process heaters, and hydrochloric acid production furnaces (HAPFs). The F-1 Furnace is subject to the Phase II HWC MACT rule.

1.5 NIC PURPOSE

The purpose of this draft Notification of Intent to Comply (NIC) document is to provide an opportunity for the public to become acquainted with technical and operational aspects of the plans for achieving compliance with the HWC MACT and the proposed schedule of activities to accomplish this required activity. Waste minimization efforts by Basic are also discussed in this document. With the information in this document, the public can be well prepared to ask questions and provide suggestions at the public meeting. Following the public meeting, Basic will supplement the draft NIC with a summary of the meeting, a list of the attendees at the meeting and their addresses, and any written comments or materials submitted at the meeting. The final NIC will be submitted to the LDEQ and EPA Region VI on or before December 12, 2006.

This draft NIC was made available for public review at the Ascension Parish Library – Gonzales Branch, 708 South Irma Boulevard, Gonzales, Louisiana 70737 on or before September 12, 2006. Notice of the upcoming public meeting and the availability of this draft NIC document was provided to the public via newspaper advertisement, radio announcements, notice to all parties on the facility mailing list, and a posted sign near the entrance to the Basic plant site. This draft NIC document is organized as follows:

- Section 2.0: F-1 Furnace System Evaluation and Potential Modifications
- Section 3.0: Waste Minimization Efforts
- Section 4.0: Planned Equipment Modifications and Testing.

2.0 F-1 FURNACE SYSTEM EVALUATION AND POTENTIAL MODIFICATIONS

2.1 EXISTING SYSTEM

The F-1 Furnace is permitted under Resource Conservation and Recovery Act (RCRA) and Clean Air Act (CAA) Title V Operating permits. The F-1 Furnace is designed to treat liquid wastes and vapor vents. Refer to Figure 2-1. The F-1 Furnace consists of a thermal oxidizer, energy recovery boiler, quench tower and scrubbing tower. Liquid wastes and vapor vents are combusted in the thermal oxidizer. The resulting exhaust gas passes through a fire tube energy recovery boiler (B-3) and the quench tower (T-10). T-10 is a packed column water scrubber that is used to cool the combustion gas via water and recycle sprays, and to begin recovery of the hydrochloric acid (HCl) produced during combustion. Following the quench tower is the scrubbing tower, T-11. T-11 is a packed column consisting of two water scrubber sections and a single caustic scrubber section. The T-11 water scrubber sections continue the recovery of HCl. The T-11 caustic scrubber section removes residual HCl and molecular chlorine (Cl_2) before the combustion gas is discharged to the atmosphere via the integrated stack.

2.2 APPLICABLE EMISSIONS AND PERFORMANCE STANDARDS

The emissions standards applicable to existing HAPFs are summarized in Table 2-1. The performance standards applicable to existing HAPFs are organic destruction and removal efficiency (DRE), and control of HCl/Cl_2 emissions. Compliance with the DRE, and the carbon monoxide and hydrocarbon emissions standards, serve as surrogates to a numerical standard for dioxin/furan emissions. Compliance with the HCl/Cl_2 emissions standards serves as a surrogate to numerical standards for particulate matter and metals emissions. For HWC MACT compliance, the applicable DRE performance standard is 99.99%, which is equivalent to the RCRA DRE standard. Previous trial burn data from 1990 show the F-1 Furnace meets the RCRA and HWC MACT DRE performance standards.

2.3 PLANNED UNIT MODIFICATIONS

Basic is undertaking enhancements as necessary to comply with the HWC MACT requirements. These planned enhancements can be broken down into three basic categories: (1) management system, (2) process control and monitoring system, and (3) emissions control system.

2.3.1 Management System

Management systems will be modified to meet the new HWC MACT requirements. These enhancements include, but are not limited to, operation and maintenance plans; startup, shutdown and malfunction plan; feedstream analysis plan; continuous monitoring system performance evaluation plan; operator training; comprehensive performance testing; operational data management; and compliance and operating data reporting.

2.3.2 Process Control and Monitoring System

The F-1 Furnace process control and monitoring systems will be modified to meet the new HWC MACT requirements. The F-1 process control system logic and operating data management will be modified to meet the new HWC MACT requirements. The potential modifications include, but are not limited to, additional monitoring instrumentation; upgrade of the continuous emissions monitoring system (CEMS); rolling average calculation modifications; automatic waste feed cutoff set point modifications; control loop computer modifications; and additional computer memory.

Basic plans to operate the F-1 Furnace under at least three operating modes: 1) hazardous waste and process vent treatment, 2) process vent only treatment, and 3) Hot Standby/Idle. The process control system will include set points for operating limits applicable to the respective operating modes. The electronic operating record will be used to document the periods of operation in each mode.

2.3.3 Emissions Control System

The F-1 Furnace performance and emissions already comply with the HWC MACT standards. However, Basic is considering undertaking enhancements to improve HCl/Cl_2 emissions control performance.

In anticipation of the promulgation of the HWC MACT rule in the fall of 2005, Basic conducted internal miniburn in April 2005 to assess specific F-1 Furnace emissions. During the miniburn, the F-1 Furnace was operated within the limits prescribed by the current RCRA and CAA permits. The miniburn was conducted treating the most highly chlorinated waste stream treated by the F-1 Furnace, and therefore provided a near "worst case" indication of the system's capability to control HCl/Cl_2 emissions. HCl/Cl_2 emissions were measured using EPA Method 26A. Waste feed samples were analyzed to determine the chlorine feed rate. The miniburn HCl/Cl_2 emissions test results show the F-1 Furnace meets the applicable HWC MACT HCl/Cl_2 emissions performance standard.

Basic is considering modifications to the F-1 Furnace emissions control system to improve the efficiency of the HCl/Cl_2 gas scrubbing. Numerous options are currently being evaluated. The potential modifications include a combination of operational changes, and scrubber packing and recycle stream changes. The options are being evaluated based on their ability to consistently achieve HWC MACT HCl/Cl_2 emissions performance standard.

3.0 WASTE MINIMIZATION EFFORTS

All of the liquid hazardous waste streams that are fed to the F-1 Furnace are generated from the on-site Basic manufacturing operations. Production activities that generate these hazardous wastes are mostly chemical reactions. The reaction products typically undergo physical separation via distillation, fractionation, and/or other unit operations to purify and isolate the desired products.

Basic uses closed loop processes to minimize the amount of hazardous wastes that must be treated. Where possible, unreacted chemical fractions are recovered and reused in the production processes. As a member of the American Chemistry Council, Basic is committed to minimizing waste generation. Basic also implements the waste minimization code of the Responsible Care program of the American Chemistry Council.

Despite the active waste minimization and recovery programs, the liquid wastes resulting from the production activities include unrecoverable and unmarketable chemical mixtures, which must be treated. Other manufacturing liquid wastes include equipment cleaning solvents and separations from the chemical recovery operations. Additionally, liquid wastes are generated from the production analytical laboratory activities and from service operations.

Basic will continue to pursue waste minimization opportunities. However, Basic believes that despite such efforts it will still be necessary to operate F-1 Furnace unit to manage liquid waste streams, and the process vent streams. As described elsewhere in this document, the on-going use of the F-1 Furnace will be in compliance with all Federal and State rules.

4.0 PLANNED EQUIPMENT MODIFICATIONS AND TESTING

4.1 SCHEDULE

A schedule of activities for potential equipment modifications and testing of the modified F-1 Furnace system is provided in Table 4-1. The schedule is based on realistic estimates for these activities, consistent with allotted time periods for certain tasks that are contained in the HWC MACT standard. A brief discussion of the different phases is provided below.

4.2 SYSTEM DESIGN

Basic has initiated an engineering evaluation for improving the F-1 Furnace system's HCl/Cl_2 emissions control performance. This effort consists of a technical and economic evaluations of the emissions control system components and the HWC MACT emission standards. The engineering evaluation is ongoing.

4.3 SYSTEM CONSTRUCTION FOR POTENTIAL MODIFICATIONS

Once engineering evaluation is completed and the modifications to the emissions control system are decided, appropriate regulatory agency approval must be received before modifications can begin. Basic intends to make the emissions control system modifications via RCRA Class 1^1 permit modification process [40 CFR 270.42(j)]. The RCRA Class 1^1 permit modification requires agency approval to make modifications to comply with the HWC MACT emissions standards, but excludes the public meeting normally required for the type of upgrades that would otherwise be RCRA Class 3 modifications. The agency has a maximum of 120 days to approve or deny the request. If there is no agency response to a RCRA Class 1^1 permit modification request, the request *"…shall be deemed to be approved"*. [40 CFR 270.42(j)(2)]

Following agency approval of the planned modifications, Basic will be in a position to issue purchase orders for any equipment that may be required to meet the HWC MACT. Upon receipt of all required permits, and delivery of equipment, construction activities will commence. Basic estimates that construction activities will require less than one month to complete.

4.4 SYSTEM TESTING

Following completion of the system modifications, Basic will conduct startup and shakedown operation of the modified system. Basic will undertake internal miniburn testing to assess the impacts of the modifications and their adequacy in meeting the HWC MACT HCl/Cl_2 emissions performance standard. This miniburn testing will also verify the readiness of the F-1 Furnace to proceed to the required HWC MACT comprehensive performance test (CPT). The purpose of the CPT is to demonstrate that the F-1 Furnace system can consistently meet the HWC MACT emission limits, and to establish operating

conditions (i.e. waste feed rates, combustion system temperature, and emissions control system operating conditions) that will become conditions of the final operating permit.

Basic will initiate the CPT once the CPT plan is approved and commensurate with the HWC MACT rule timeline. The HWC MACT provisions allow up to 90 days following completion of the CPT to prepare and submit the CPT report and the Notification of Compliance (NOC). In the time period following completion of system modifications construction, and prior to submission of the NOC to the LDEQ and EPA Region VI, Basic will operate the modified F-1 Furnace system under operating conditions and limits included in the Documentation of Compliance (DOC), and the existing RCRA and CAA permits.

4.5 SYSTEM STARTUP

Following completion of the CPT discussed above, and receipt of test results demonstrating compliance with all HWC MACT emission limits, Basic will submit a test report and a NOC to the LDEQ and EPA Region VI. The NOC will specify the final operating conditions and limits under which the system will be operated, and that will be incorporated into the facility's Title V operating permit.

5.0 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and any attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sincerely,
DRAFT

Wade L. Alleman
Plant Manager
Basic Chemicals Company, LLC
Geismar, Louisiana

Table 2-1. Emissions Standards for Existing Hydrochloric Acid Production Furnaces

Hazardous Air Pollutant (HAP)	Emissions Standard	HAP Averaging Period
Dioxins/Furans (ng/dscm TEQ)	Comply with CO or HC, and DRE standard as surrogate [a]	HRA (CO or HC) & DRE related OPLs
Particulate Matter (mg/dscm)	Comply with HCl/Cl_2 standard as surrogate [b]	Refer to HCl/Cl_2
HCl/Cl_2 (as Cl^- equivalents)	150 ppmdv [b,c] or 99.923% SRE	12-HRA (chlorine feed rate) & HCl control related OPLs
Mercury (Hg)	Comply with HCl/Cl_2 standard as surrogate [b]	Refer to HCl/Cl_2
Semi volatile metals (SVM) (ug/dscm) (cadmium [Cd] and lead [Pb])	Comply with HCl/Cl_2 standard as surrogate [b]	Refer to HCl/Cl_2
Low volatile metals (LVM) (ug/dscm) (arsenic (as), beryllium (Be), and chromium [Cr])	Comply with HCl/Cl_2 standard as surrogate [b]	Refer to HCl/Cl_2
Hydrocarbons (HC) (ppmdv)	10 [c]	HRA
Carbon monoxide (CO) (ppmdv)	100 [c]	HRA

Table Notes:

[a] There is no numerical dioxin/furan standard established for hydrochloric acid production furnaces (HAPFs). The F-1 Furnace currently complies with the RCRA BIF CO standard, which is equivalent to the HWC MACT standard. The F-1 Furnace must demonstrate compliance with the HC standard during the comprehensive performance test while demonstrating compliance with the destruction and removal efficiency (DRE) performance standard. Under HWC MACT, the F-1 Furnace will continue to measure CO emissions in compliance with the HWC MACT.Although HAPFs do not have to comply with a numeric dioxin/furan emission standard, the provisions in 63.1207(b)(3) require *"a one-time emission test for dioxin/furan under feed and operating conditions that are most likely to reflect daily maximum operating variability, similar to a dioxin/furan comprehensive performance test."*

[b] There is no numerical particulate or metals emissions standards established for HAPFs. Compliance with the HCl/Cl_2 standard serves as a surrogate for these emissions.

[c] The concentration emission standards are corrected to 7% oxygen.

BIF = Hazardous Waste Burned in Boilers and Industrial Furnaces, 40 CFR 266, Subpart H.
Cl^- = ionic chlorine
Cl_2 = molecular chlorine
DRE = destruction and removal efficiency
HCl = hydrogen chloride
HWC MACT = Hazardous Waste Combustor (HWC) Maximum Achievable Control Technology (MACT) rule (40 CFR 63, Subpart EEE).
HRA = hourly rolling average
RCRA = Resource Conservation and Recovery Act
SRE = system removal efficiency = $(1- Cl^-_{OUT}/Cl^-_{IN}) \times 100\%$
TEQ = toxicity equivalents (to 2,3,7,8-tetrachloro-p-dibenzodioxin or 2,3,7,8-TCDD)
OPL = operating parameter limit
12-HRA = 12-hour rolling average

Table 4-1. Schedule of Activities for the F-1 Furnace Modifications and Testing

ACTIVITY	Target Date
Draft Notification of Intent to Comply (NIC) available for public comment	By September 12, 2006
Public meeting to discuss the NIC	By October 12, 2006
End public comment period on NIC	By November 12, 2006
Submit final NIC to LDEQ and EPA	By December 12, 2006
Complete engineering evaluation of potential modifications.	1st Quarter, 2007
Submit RCRA Class 1[1] modification request	2nd Quarter, 2007
Submit air construction permit application modification	2nd Quarter, 2007
Receive RCRA and air permit change approvals	4th Quarter, 2007
Issue purchase orders for equipment required for modification	1st Quarter, 2008
Make system modifications	1st Quarter, 2008
Conduct miniburn testing of modified system	1st Quarter, 2008
Submit CPT plan to LDEQ and EPA	By April 14, 2008
Certify final compliance (by placing DOC in operating record)	October 14, 2008
Receive approved CPT Plan	2nd Quarter, 2009
Commence CPT	By April 14, 2009
Submit CPT report and NOC to LDEQ and EPA	90 days after end of CPT

The anticipated dates provided here are not enforceable deadlines, but are provided here to inform the public of the general activities involved in coming into compliance with the HWC MACT rule. These activities and dates may be revised as the project proceeds.

LEGEND

BE – FLAME SCANNER
FI – FLOW INDICATOR
FIC – FLOW INDICATOR CONTROLLER
FR – FLOW RECORDER
LIC – LEVEL INDICATOR CONTROLLER
LSL(L) – LEVEL SWITCH LOW (LOW)
PC – PRESSURE CONTROLLER
PSL – PRESSURE SWITCH LOW
TSL – TEMPERATURE SWITCH LOW
* – PROVIDE SIGNAL FOR RCRA/TSCA LIQUID FEED CUTOFF

SAMPLING POINTS

1. Hex Waste Feed
2. Other Waste Feed
3. HCl Product
4. Scrubber Purge
5. Non–Isokinetic Sampling Ports
6. Isokinetic Sampling Ports
7. Installed CEMS
8. Temporary CEMS

C–7 COMBUSTION AIR BLOWER
F–1 THERMAL OXIDIZER
B–3 WASTE HEAT BOILER
T–10 QUENCH TOWER
E–8 QUENCH TOWER COOLER
T–11 SCRUBBING TOWER

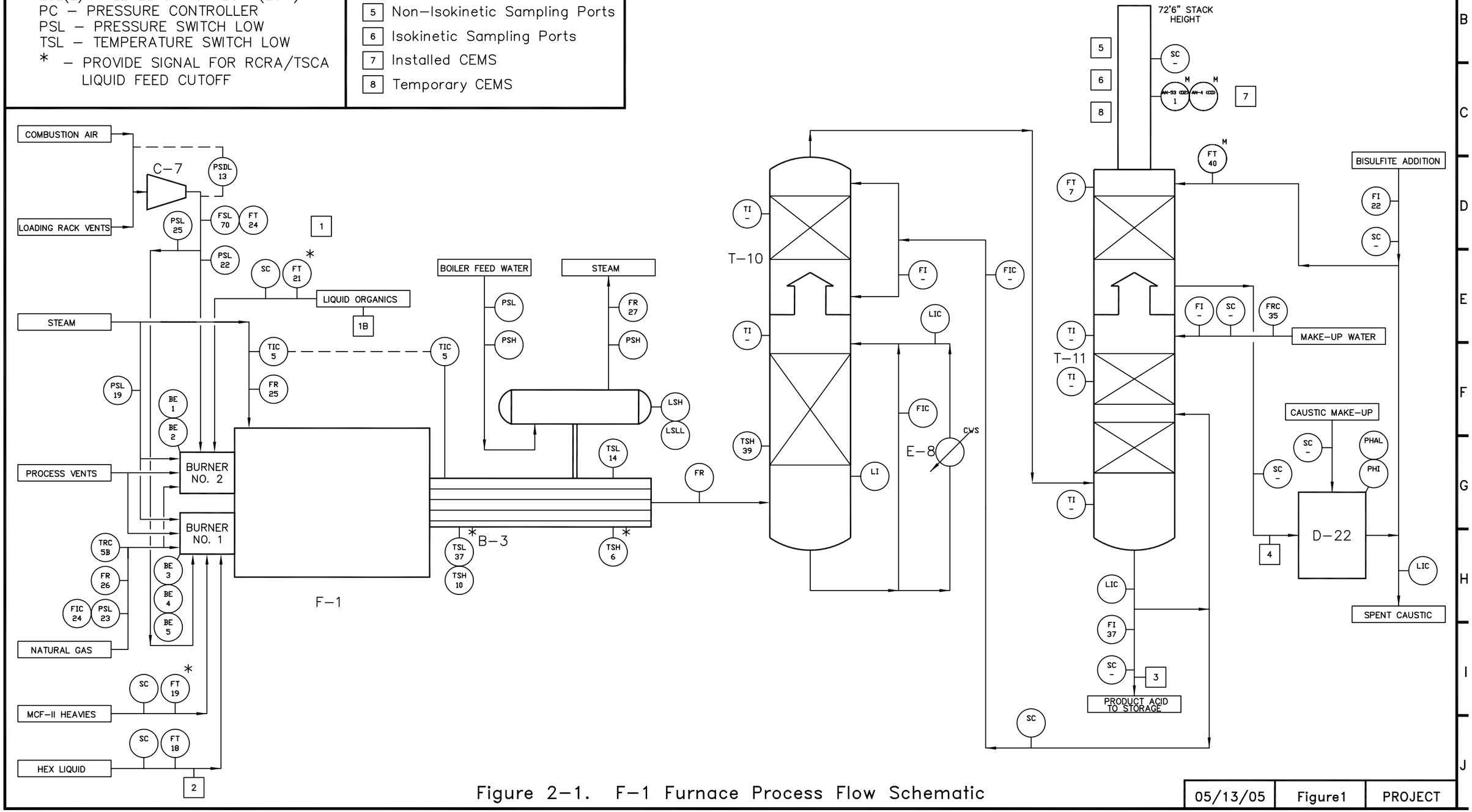

Figure 2–1. F–1 Furnace Process Flow Schematic

05/13/05	Figure1	PROJECT